

ABSTRACT

A hybrid structure or device is provided wherein carried on a single substrate is at least one micro-spring interconnect having an elastic material that is initially fixed to a surface of the substrate, an anchor portion which is fixed to the substrate surface and a free portion. The spring contact is self-assembling in that as the free portion is released it moves out of the plane of the substrate. Also integrated on the substrate is a sensor having an active layer and contacts. The substrate and sensor may be formed of materials which are somewhat partially transparent to light at certain infrared wavelengths. The integrated sensor/spring contact configuration may be used in an imaging system to sense output from a light source which is used for image

formation. The light source may be a laser array, LED array or other appropriate light source. The sensor is appropriately sized to sense all or some part of light from the light source. The sensor may also be sufficiently transparent so that light is not blocked from its emission path, with a contrast ratio such that it only absorbs a small fraction of light passing therethrough. An additional characteristic is that the manufacturing process is compatible with the manufacturing process for the micro-spring interconnects. Data from the sensor is used as light source correction information. This information is provided to a calibration configuration which allows for calibration of high-speed systems.

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